WHAT IS CLAIMED IS:

1. A polishing pad comprising:

a polishing layer having a polishing surface;

a window member in an opening of the polishing layer, the window member having a top surface positioned at least a predetermined distance below the polishing surface; and

a transparent layer positioned below the polishing layer and supporting the window member.

2. The polishing pad of claim 1, wherein the top surface of the window member and a bottom surface of the window member are abraded.

3. The polishing pad of claim 1, wherein the transparent layer includes a fluid impermeable layer.

4. The polishing pad of claim 1, wherein the transparent layer includes an adhesive layer.

5. A polishing pad comprising:

an upper layer including a polishing surface and an opening;

a window member extending through at least part of the opening, the window member having a top surface positioned at least a predetermined distance below the polishing surface;

a supporting layer disposed below the upper layer; and

an adhesive layer disposed below the supporting layer, at least one of the supporting layer and the adhesive layer spanning the opening and supporting the window member.

6. The polishing pad of claim 5, wherein the adhesive layer includes a transparent adhesive.

7. The polishing pad of claim 5, wherein the adhesive layer includes a double-sided adhesive tape.

8. The polishing pad of claim 5, further comprising a bonding material attaching the window member to the supporting layer.

9. The polishing pad of claim 5, further comprising an adhesive between the upper layer and the supporting layer.

10. The polishing pad of claim 5, wherein the supporting layer includes a transparent incompressible polymer sheet.

11. The polishing pad of claim 5, wherein the window member includes a clear polyurethane.

12. The polishing pad of claim 5, wherein the top surface and a bottom surface of the window member are abraded.

13. The polishing pad of claim 5, further comprising a bonding material attaching the window member to the adhesive layer.

14. The polishing pad of claim 5, wherein the supporting layer includes an aperture and the window member extends through the aperture in the supporting layer.

15. The polishing pad of claim 5, further comprising an opening in the adhesive layer to allow an optical monitoring system to monitor a substrate through the window member.

16. The polishing pad of claim 5, wherein a portion of the adhesive layer below the window member is transparent and the remainder of the adhesive layer is opaque.

17. A method of constructing a polishing pad having a window, the method comprising:

placing a window member on a window member holding portion of a polishing pad so that the window member extends partially through an opening of a polishing layer having a polishing surface and so that a top surface of the window member is spaced a predetermined distance below the polishing surface.

18. The method of claim 17 comprising:

placing a continuous bead of adhesive sealant on one or more of a window member and a window member holding portion of a polishing pad; and

curing the adhesive sealant.

19. The method of claim 18, further comprising:

pressing the window member against the adhesive sealant with a weight-imparting element until the adhesive sealant is cured.

20. The method of claim 19, further comprising:

placing a spacer having a depth of the predetermined distance on the window member until the adhesive sealant is cured, wherein the spacer is between the window member and the weight while the adhesive sealant cures.

21. The method of claim 20, wherein the spacer includes a polytetra-fluoroethylene ("PTFE") sheet.

22. The method of claim 18, wherein the adhesive sealant includes a viscous rubber-like glue.

23. The method of claim 18, wherein the adhesive sealant is placed on the window member holding portion.

24. The method of claim 18, wherein the adhesive sealant is placed on the window member.

25. The method of claim 18, wherein the window member holding portion includes a supporting layer of the polishing pad.

26. The method of claim 25, wherein the supporting layer is a polyethylene terephthalate ("PET") layer.

27. The method of claim 18, wherein the window member holding portion includes a pressure sensitive adhesive layer.

28. The method of claim 18, further comprising:

abrading the top surface and a bottom surface of the window member.

29. The method of claim 18, further comprising:

removing a portion of the polishing layer to form the opening in the polishing layer.

30. A chemical mechanical polishing apparatus comprising:

a platen;

an optical monitoring system housed in a recess of the platen;

a polishing pad mounted on the platen, the polishing pad including

an upper layer including a polishing surface and an opening,

a window member extending through at least part of the opening, the window member having a top surface positioned at least a predetermined distance below the polishing surface,

a supporting layer adjacent a bottom surface of the upper layer, the bottom surface of the upper layer opposite to the polishing surface, and

an adhesive layer between the supporting layer and the platen;

wherein the optical monitoring system monitors a polishing operation through the window member of the polishing pad.

31. The apparatus of claim 30, wherein the optical monitoring system includes:

a light source; and

a light detector.

32. The apparatus of claim 30, wherein the optical monitoring system monitors a polishing operation by detecting change in reflectivity of a substrate being polished using the polishing pad.